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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/815,260

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C. Joseph Farahmandi

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10/28/2005

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EXAMINER

NGUYEN, HA T

ART UNIT

PAPER NUMBER

2812

DATE MAILED: 10/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/815,260

Applicant(s)

FARAHMANDI ET AL.

Examiner

Ha T. Nguyen

Art Unit

2812

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 August 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-9 and 11-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13 and 14 is/are allowed.
- 6) ☒ Claim(s) 1,3-9,11-12,15-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Notice to applicant*

1. Applicants' Amendment and Response to the Office Action mailed 5-4-2005 has been entered and made of record.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 1038 and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1, 3, 6-9, 11-12, 15, and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wei et al. (USPN 6152970, hereinafter "Wei") or Farahmandi et al. (USPN 5862035, hereinafter "Farahmandi") in view of Miller (USPN 4683516):

[Re Claim 1] Referring to Fig. 1 and related text, Wei discloses a method of making a double layer capacitor comprising: juxtaposing a respective side of each of a plurality of electrodes 14 with one of a plurality of current collector foils 22 wherein each of the plurality of electrodes comprises carbon; interposing a porous separator 18 between respective other sides of each of the saturating the plurality of electrodes with an electrolyte solution; sealing the plurality of electrodes and the plurality of current collector foils within a case ; and electrically coupling

the first terminal to one of said plurality of current collector foils (see Fig. 1, Summary and col. 5, lines 23-col. 8, line 40).

[Re claim 6] Referring to Figs. 1-15 and related text, Farahmandi discloses [Re claim 6] a method of making a double layer capacitor comprising: coupling a first current collector foil 22 to an internal portion of a first terminal 28; folding a first electrode 12 over the current collector foil wherein the first electrode comprises carbon; placing a porous separator 18 against the first electrode; juxtaposing a second electrode 14 against the porous separator wherein the second electrode comprises carbon; coupling electrically the second electrode to a case; saturating the first electrode and the second electrode with an electrolyte solution; and sealing the case, wherein the electrolyte is substantially contained within the case (see col. 20, line 58- col. 21, line 7, and col. 22, lines 27-67).

But Wei or Farahmandi fails to disclose expressly sealing hermetically to substantially inhibit an influx of impurities into the electrolyte solution; wherein said sealing hermetically includes: forming a glass-to-metal seal between another portion of said first terminal and said case; [Re claim 3] wherein said glass-to-metal seal can withstand exposure to temperatures of up to 250C for periods of up to 5 minutes; [Re claim 11] wherein said sealing hermetically further includes: welding a header to the case, wherein the header includes the glass-to-metal seal; [Re claim 12] selecting material for said first terminal having a coefficient of thermal expansion substantially similar to a coefficient of thermal expansion of glass; [Re claim 15] wherein said selecting comprises selecting a plating material for said first terminal that is solderable.

However, the missing limitations are well known in the art because Miller discloses most of these features (See Fig. 5, # 15, 19, 12 and col. 4, line 60-col. 8, line 4 ). The combined teaching of Wei or Farahmandi with Miller does not expressly disclose the first terminal having a coefficient of thermal expansion substantially similar to a coefficient of thermal expansion of glass. However, it would have been obvious to an ordinary artisan to choose material having coefficient of thermal expansion matching that of glass to ensure reliable welding.

[Re claim 6] Referring to Fig. 1 and related text, Wei discloses a method of making a double layer capacitor comprising: coupling a first current collector foil 22 to an internal portion of a first terminal 28; applying a first electrode 14 over the current collector foil wherein the first electrode comprises carbon; placing a porous separator 18 against the first electrode; juxtaposing

a second electrode 16 against the porous separator wherein the second electrode comprises carbon; attaching the second electrode to a case 12; saturating the first electrode and the second electrode with an electrolyte solution; and sealing the case. But it fails to disclose expressly sealing hermetically to contain the electrolyte substantially within the case and to substantially inhibit an influx of impurities into the electrolyte solution; the folding of the first electrode over a current collector and the case is electroconductive. However, Miller discloses sealing hermetically, as shown above. Besides, the examiner takes Official Notice that the other missing limitations are well known in the art, they are commonly used in the art to reduce capacitor size.

A person of ordinary skill is motivated to modify Wei or Farahmandi with Miller to obtain hermetically sealed capacitor to avoid degradation of capacitor characteristics caused by a loss of electrolyte or infusion of water from outside the case into the capacitor .

[Re claim 7] Wei also discloses wherein said placing said porous separator comprises enveloping said first electrode with said porous separator; [Re claim 8] wherein said juxtaposing comprises juxtaposing said second electrode over said porous separator (see Fig. 2);

[Re claim 9] wherein said coupling electrically comprises: juxtaposing a second current collector foil over the second electrode; and contacting the second current collector foil with the case (see Fig. 1);

[Re claims 19-20] placing a constant pressure on said first and second electrodes, said first and second current collector foils, and said porous separator (see col. 5, lines 23-32). Wei does not disclose wherein said placing said modest constant pressure comprises forming crimps in said case. However, the examiner takes Official Notice that it is a common practice in the art to crimp the capacitor case to maintain a small pressure inside the capacitor.

Therefore, it would have been obvious to combine Wei or Farahmandi with Miller to obtain the invention as specified in claims 1, 3, 6-9, 11-12, 15, and 19-20.

4. Claims 4-5 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wei or Farahmandi in view of Miller, as applied above, and further in view of Rayburn (USPN 4942610).

The combined teaching of Wei or Farahmandi and Miller discloses substantially the limitations of claims 4-5 and 16-18, as shown above.

But it fails to disclose expressly wherein said interposing comprises interposing said porous separator wherein said porous separator can withstand exposure to temperatures of up to 250C for periods of up to 5 minutes; wherein said porous separator comprises polytetrafluoroethylene (PTFE); and selecting materials to make said double layer capacitor that can withstand exposure to temperatures of up to 250C for periods of up to 5 minutes.

However, the missing limitations are well known in the art because Rayburn discloses this feature (abstract ). Because the same PTFE separator material is used, it is inherent that like the claimed separator, the PTFE separator can withstand temperature of up to 250C for periods of up to 5 minutes.

A person of ordinary skill is motivated to modify Wei or Farahmandi with Rayburn to obtain a separator resistant to chemicals used in electrolyte.

Therefore, it would have been obvious to combine Wei or Farahmandi and Miller with Rayburn to obtain the invention as specified in claims 4-5 and 16-18 .

#### ***Allowable Subject Matter***

5. Claims 13-14 are allowable, the reason for allowance were given in the immediately preceding Office Action.

#### ***Response to Amendment***

6. In view of applicants' cancellation of the claims, the rejection of claims 2 and 10 under 35 U.S.C. 103 is rendered moot.

In view of applicants' amendment to the claims, the objection to claims 1-5 has been withdrawn.

Applicants did not challenge the obviousness of the features stated in the examiner's Official Notices, these features are considered admitted prior art.

Applicants' arguments with regard to the rejections under 35 U.S. 103 have been fully considered, but they are not deemed to be persuasive for at least the following reasons.

Applicants argued that the examiner did not address the limitations of a glass-to-metal seal formed between a case and a first terminal because in Miller the glass-to-metal seal is formed between the case and the feed-through. The examiner disagreed, in Miller the glass-to-metal seal is formed between the case and the feed-through but it is also formed between the case

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and a first terminal because the feed-through is adjacent to and in contact with the first terminal (see Fig. 5). Note that the claims do not require the glass-to-metal seal to be in physical contact with the first terminal. Besides the Ta feed-through 18 can be considered a part of the Ta first terminal 23 or Ta integrated first terminal/feed-through.

Therefore the applied references do teach or make obvious all the limitations of the rejected claims 1, 3-9, 11-12, 15-20.

### ***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ha T. Nguyen whose telephone number is (571) 272-1678. The examiner can normally be reached on Monday-Friday from 8:30AM to 6:00PM, except the first Friday of each bi-week. The telephone number for Wednesday is (703) 560-0528.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael S. Lebentritt, can be reached on (571) 272-1873. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ha Nguyen  
Primary Examiner  
10- 20 - 05